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Technical Note: TN13 revision 3

CPG Technical Marketing

## AMD Duron™ Processor Rev. A0: CPUID Reporting of L2 Cache Size

### Abstract:

The AMD Duron™ processor, revision A0 (CPUID 630) contains an erratum that will result in the incorrect reporting of the internal L2 cache size if the CPUID extended function 8000\_0006h is used. If BIOS or any other utility uses this instruction when reporting the L2 cache size, then it is recommended that BIOS or the utility adjust the return value from this instruction as described below in “Solution.” For more information, refer to the:

- *AMD Duron™ Processor Revision Guide*, order# 23865
- *AMD Processor Recognition Application Note*, order# 20734
- *AMD Athlon™ and AMD Duron™ Processors Recognition Addendum*, order# 21922.

### Description:

When the CPUID extended function 8000\_0006h is used to obtain cache information, the AMD Duron processor rev. A0 (CPUID 630) reports the L2 cache size incorrectly.

### Solution:

Consider the code below for executing CPUID extended function 8000\_0006h:

```
mov     eax, 80000006h ;CPUID Fn 80000006h
CPUID                   ;ecx[31:16] = L2 size info
shr     ecx, 16         ;cx = L2 size (in either KB or 64KB)
```

**Do not use CPUID to determine the L2 cache size for Duron. Instead use the following code:**

```
; Check for A0 revision Duron(tm) processor
mov     eax, 1          ;CPUID Fn 1
CPUID                   ;ax = CPU version information
cmp     ax, 0630h       ;Is CPU a Rev A0 Duron(tm)?
mov     cx, 64          ;(assume yes)
je      @f              ; YES--L2 size is 64K
                        ; NO---use CPUID function to get
                        ; L2 size
mov     eax, 80000006h  ;CPUID Fn 80000006h
CPUID                   ;ecx[31:16] = L2 size info
shr     ecx, 16         ;Shift L2 size bits into cx

@@:;cx = L2 size in KB
```